

## **REMARKS**

Reconsideration of the present application in view of the above amendments and following remarks is respectfully requested.

### **Status of the Claims**

Claims 12-34 are presented. Claims 12, 17, 20, 25-27, 31 and 33 are amended to emphasize that the **hydrocarbon mixture** produced by applicants' dehydrating polymerization process is not the same mixture as that obtained by the art process of polymerization of pure linear alpha-olefins. Support is found in the specification, *inter alia*, on page 4, lines 7-11. Claims 15 and 21 are amended to correct proofreading errors. Support for the amendment to claim 15 can be found in original claim 4, now cancelled. No claims are cancelled. New claim 34 is added. Support is found in the specification as filed, *inter alia*, on page 5, lines 1-2 and 13-14, and original claim 4, now cancelled.

No new matter has been introduced.

Previously pending claim 21 was objected to because the status identifier was inadvertently indicated to be "(New)". This has been corrected in the present reply.

### **Summary of the Invention as Claimed**

As presently amended, the claimed invention is drawn to a cosmetic composition comprising a **hydrocarbon mixture** produced by a dehydrating polymerization under specified conditions, using at least one primary alcohol from a selected group (claims 12-34). The composition comprising the hydrocarbon mixture has a high spreading value of  $>1000 \text{ mm}^2/10 \text{ min}$  (claim 33). Preferred primary alcohols include 2-ethylhexanol and isononanol (claim 34).

**Rejections under 35 U.S.C. § 102(b)**

Previously pending claims 12-14 and 16-33 were rejected under 35 U.S.C. § 102(b) as being anticipated by Collin (US 6,464,967). Applicants respectfully traverse the rejection.

As a preliminary matter, the Examiner has stated that he does not agree with applicants' arguments that the hydrocarbon mixture as prepared by the claimed dehydrating polymerization process using primary alcohols as starting monomers, would be materially different from the poly- $\alpha$ -olefins recited by either Collin or Collin et al., which are prepared by the art-standard polymerization of 1-alkenes as starting monomers.

The Examiner also recited MPEP 2113, stating that the patentability of a product in a product-by-process claim does not depend on the method of production, but rather on the product itself. However, MPEP 2113 also states:

"The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. See, e.g., *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979)...."

The hydrocarbon mixtures produced by the claimed dehydrating polymerization process are examples of such structures. Thus, as disclosed in the specification as originally filed, there is no exact structural formula for the hydrocarbon mixtures obtained because

"...under the dehydrating polymerization conditions, the primary alcohols in question are isomerized into various unsaturated monomers which then polymerize with one another." (specification, page 4, lines 7-11)

Therefore it is necessary to characterize the hydrocarbon mixtures so-produced by both the starting monomers (primary alcohols selected from the group consisting of unsaturated monofunctional alcohols, branched monofunctional alcohols and difunctional alcohols) and the polymerization process.

The Declaration of Markus Dierker under 37 C.F.R. 1.132, submitted herewith, provides the testimony of a co-inventor and technical expert that these two different products are patentably distinct.

Collin discloses a make-up composition comprising a poly- $\alpha$ -olefin wax having a melting point ranging from 50-80°C, resulting from the homopolymerization of alpha-olefins having at least 10 carbon atoms. Collin discloses that her poly- $\alpha$ -olefin wax is obtained by the well-known art process of homopolymerization of pure alpha-olefins (col. 2, lines 33-38). This standard method is well-known in the art to provide a relatively narrow set of oligomers. There are many commercial products available which are prepared by this process, including such tradenames such as Nexbase®, and INCI names such as polydecene.

As discussed in the Declaration of Markus Dierker under 37 C.F.R. 1.132, filed herewith, applicants' hydrocarbon mixture is obtained by a different process (dehydration/polymerization) from different starting materials (primary alcohols versus alpha-olefins) under different reaction conditions, which inevitably leads to hydrocarbon mixtures which are materially different from the classical poly- $\alpha$ -olefins (PAOs) known in the art.

Thus, the dehydration/polymerization of primary alcohols under applicants' described reaction conditions leads to a hydrocarbon mixture with no exact structural formula for the hydrocarbons obtained because, "...under the dehydrating polymerization conditions, the primary alcohols in question are isomerized into various unsaturated monomers which then polymerize with one another" (page 4, lines 7-11; cf. International patent application PCT/EP02/11392, incorporated by reference on page 3, lines 21-22, corresponding to Zander et al., US 7,351,871).

Table 1 of the specification shows the unexpectedly superior properties of a cosmetic emulsion prepared using applicants' PAO mixture according to the invention (column 2, isononyl oligomer hydrogenated) versus the same composition prepared with an art-standard PAO (column 4, Nexbase® 2006FG,

hydrogenated poly-1-decene). The Nexbase®-based emulsion is clearly inferior to applicants' hydrogenated isononyl oligomer-based composition, both with regard to viscosity, especially after 1 week, as well as with regard to emulsion stability on storage. Regarding storage stability, the standard emulsion containing Nexbase® was clearly inferior after 4 weeks, and had separated after 8 and 12 weeks, whereas the hydrogenated isononyl oligomer-based emulsion of the invention was still perfectly stable after 12 weeks under the standard test protocol.

Thus, as attested to in the Declaration of Markus Dierker, applicants' hydrocarbon mixtures prepared by dehydrating polymerization are materially different from the poly- $\alpha$ -olefins of the cited art. Since the compound mixtures are distinct, Collin is an inappropriate reference for an anticipation rejection, and applicants' claims as presently amended define novel subject matter over the cited art.

#### **Rejections under 35 U.S.C. § 103(a)**

Previously pending claim 15 was rejected under 35 U.S.C. § 103(a) as being obvious over Collin et al. (US 6,641,821; "Collin et al."). Applicants respectfully traverse the rejection.

Collin et al. discloses a cosmetic composition comprising a film-forming polymer, a poly- $\alpha$ -olefin wax resulting from the homopolymerization of an alpha-olefin, and a liquid fatty phase. Collin et al. also discloses the inclusion of a non-volatile oil in the composition, which may be a Guerbet alcohol.

As presently amended to correct an editing error, claim 15 further limits the group b) primary alcohol of claim 14 to comprise a specific type of alpha-branched primary alcohols, Guerbet alcohols. With the claim so amended, the same arguments made in regard to claims 12-14 and 16-33 now apply to claim 15. See the Declaration of Markus Dierker under 37 C.F.R. 1.132, filed herewith.

Thus, applicants' hydrocarbon mixtures are materially different from PAOs known in the art, providing cosmetic emulsions which contain them with unexpected and advantageous viscosity and stability properties. Further, the cited art in no way teaches or suggests the high spreading value of applicants' hydrocarbon mixture, as presently claimed. There is no teaching or suggestion in either Collin or Collin et al. that would indicate such improved properties, nor does either reference teach or suggest that PAOs prepared by a different method (i.e., other than homopolymerization of alpha-olefins) would provide such improved properties. As such, both Collin and Collin et al. are improper references for an obviousness rejection, and applicants' claims as presently amended define subject matter that is novel and patentably distinct over the cited art.

### **Conclusion**

In summary, in view of the above claim amendments and remarks, in light of the Rule 132 Declaration submitted herewith, applicants believe that all of the pending claims as amended are in condition for allowance. The Examiner is respectfully requested to reconsider, withdraw the rejections and allow the claims.

If any additional fees are required in support of this application, authorization is granted to charge our Deposit Account No. 50-1943.

Respectfully submitted,

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